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EXAMINER	
MANDEVILLE, JASON M	

ART UNIT	PAPER NUMBER
2629	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/552,976	MATSUDA, YOJIRO	
	Examiner	Art Unit	
	JASON M. MANDEVILLE	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 September 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *13-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 October 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. **Claims 13-16** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Independent **Claims 13 and 16** both recite "a second display operation" including a "second reset operation in which the charged particles create a fourth distribution, substantially identical to the second distribution, on the second electrode side and on the third electrode side by applying a second voltage, opposite in polarity to the first voltage, to the second electrode and to the third electrode." This limitation is not described in the specification and accompanying drawings and is, in fact, not realizable with disclosed invention. According to the specification, claims, and accompanying drawings, two types of charged particles having mutually different charge polarities (i.e., "+" and "-") but identical color are held in a closed container. The distribution of the charged particles is controlled by the

potentials applied to first, second, and third electrodes surrounding the closed container. During a "first reset operation," by applying a reset potential having a "first voltage" to the second and third electrodes, the charged particles will be distributed in the container with a certain "second distribution" (i.e., the positively charged particles will be in one state and the negatively charged particles will be in another state within the container). During a "second reset operation," by applying a "second voltage, opposite in polarity to the first voltage, to the second electrode and to the third electrode," the charged particles cannot create a "fourth distribution, substantially identical to the second distribution" because the charged particles cannot realize the same distribution with opposite polarity voltage (i.e., the positively and negatively charged particles will be in the polar opposite state from the "second distribution"). This fact is indeed shown in the accompanying drawings (i.e., compare the "first reset operation" of Fig. 1A to the "second reset operation" of Fig. 2A or compare the "first reset operation" of Fig. 3A to the "second reset operation" of Fig. 4A). As shown, the "fourth distribution" cannot possibly be "substantially identical to the second distribution." Therefore, **Claims 13-16** are rejected as failing to meet the written description requirement.

3. **Claims 13-16** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Again, independent **Claims 13 and 16** both recite "a second display

operation" including a "second reset operation in which the charged particles create a fourth distribution, substantially identical to the second distribution, on the second electrode side and on the third electrode side by applying a second voltage, opposite in polarity to the first voltage, to the second electrode and to the third electrode." This limitation is not described in the specification and accompanying drawings and is, in fact, not realizable with disclosed invention. According to the specification, claims, and accompanying drawings, two types of charged particles having mutually different charge polarities (i.e., "+" and "-") but identical color are held in a closed container. The distribution of the charged particles is controlled by the potentials applied to first, second, and third electrodes surrounding the closed container. During a "first reset operation," by applying a reset potential having a "first voltage" to the second and third electrodes, the charged particles will be distributed in the container with a certain "second distribution" (i.e., the positively charged particles will be in one state and the negatively charged particles will be in another state within the container). During a "second reset operation," by applying a "second voltage, opposite in polarity to the first voltage, to the second electrode and to the third electrode," the charged particles cannot create a "fourth distribution, substantially identical to the second distribution" because the charged particles cannot realize the same distribution with opposite polarity voltage (i.e., the positively and negatively charged particles will be in the polar opposite state from the "second distribution"). This fact is indeed shown in the accompanying drawings (i.e., compare the "first reset operation" of Fig. 1A to the "second reset operation" of Fig. 2A or compare the "first reset operation" of Fig. 3A to the "second

reset operation" of Fig. 4A). As shown, the "fourth distribution" cannot possibly be "substantially identical to the second distribution." Therefore, **Claims 13-16** are rejected as failing to meet the enablement requirement.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. **Claims 13-16** are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson (US 2005 / 0270267) in view of Kuwahara et al. (hereinafter "Kuwahara" US 6,486,866).

6. As pertaining to **Claim 13**, Johnson discloses (see Fig. 1 and Figs. 2A-2C) a display apparatus (see Page 1, Para. [0001]-[0003] and see Page 2, Para. [0025]), comprising:

a first substrate (i.e. ,see (11)) provided with a container (see Figs. 2A-2C; see Page 2 through Page 3, Para. [0027]-[0030]),

two types of charged particles (i.e., see (14, 14')) held in the container (again, see Figs. 2A-2C) and having mutually different charge polarities (i.e., positive and negative charge polarities) and a substantially identical color (i.e., black, for example; see Page 2 through Page 3, Para. [0027]-[0030] along with Abstract); and

first, second and third electrodes (i.e., see (7, 6, 6')) for generating an electric field in the container (again, see Figs. 2A-2C), with the first electrode (7) being disposed on the first substrate (11; again, see Figs. 2A-2C along with Fig. 3; also see Page 2 through Page 3, Para. [0027]-[0030]);

wherein the display apparatus (see Figs. 2A-2C along with Fig. 4, for example) alternately executes a first display operation (i.e., a first display of data; see (Vn) in Fig. 4, for example) and a second display operation (i.e., a second display of data; see (Vn+1) in Fig. 4, for example),

wherein in the first display operation (i.e., a first display of data; see (Vn) in Fig. 4, for example), the charged particles (i.e., see (14, 14')) create a first distribution (i.e., see Figs. 2A-2C) on a first electrode side (7) by changing a voltage applied to the second electrode (i.e., (6)) or the third electrode (i.e., (6')) after a first reset operation (i.e., see (40) in Fig. 4, for example) in which the charged particles (i.e., see (14, 14')) create a second distribution (i.e., an arbitrary distribution forced by the reset potential (40); see Fig. 4) on a second electrode side (i.e., (6)) and on a third electrode side (i.e., (6')) by applying a first voltage (i.e., see (40)) to the second electrode (i.e., (6)) and to the third electrode (i.e., (6'); again, see Fig. 4 along with Page 2 through Page 3, Para. [0027]-[0030]), and

wherein in the second display operation (i.e., a second display of data; see (Vn+1) in Fig. 4, for example), the charged particles (i.e., see (14, 14')) create a third distribution (i.e., see Figs. 2A-2C) on the first electrode side (7) by changing a voltage applied to the second electrode (i.e., (6)) or the third electrode (i.e., (6')) after a second reset operation (i.e., see (40) in Fig. 4, for example) in which the charged particles (i.e., see (14, 14')) create a fourth distribution (i.e., an arbitrary distribution forced by the reset potential (40); see Fig. 4), substantially identical to the second distribution (i.e., the distribution of particles will be substantially the same, but with reversed polarity), on the second electrode side (i.e., (6)) and on the third electrode side (i.e., (6')) by applying a second voltage (i.e., see (40)), opposite in polarity to the first voltage (i.e., see (40) wherein the reset operation comprises positive and negative polarity voltages), to the second electrode (i.e., (6)) and to the third electrode (i.e., (6'); again, see Fig. 4 along with Page 2 through Page 3, Para. [0027]-[0030]).

While it is implicit in the display apparatus disclosed by Johnson that the container (see Figs. 2A-2C) must be a closed container in order to hold the dispersion medium and the charged particles of the display, Johnson does not explicitly show the means by which the container is closed. However, the use of microcapsules and barrier walls to segment display pixels in an electrophoretic display are well known in the art and the implementation of such microcapsules and barrier walls is well established. In fact, Kuwahara discloses (see Fig. 1, for example) an electrophoretic display apparatus in which display pixels (6) are segmented into closed containers made up of

microcapsules with barrier walls or cells with barrier walls (see Col. 10, Ln. 63-67 through Col. 11, Ln. 1-9 and Ln. 23-35; as well as Col. 11, Ln. 50-67 through Col. 12, Ln. 1-11; and see Col. 15, Ln. 64-67 through Col. 16, Ln. 1-13). It is a goal of Kuwahara to provide an electrophoretic display with improved viewing quality and memory capability, as well as decreased eye fatigue and reduced power consumption (see Col. 15, Ln. 64-67 through Col. 16, Ln. 1-13). Further, the inventions of Johnson and Kuwahara are in the same field of endeavor. Further still, Kuwahara serves to disclose what is well known and established in the art, namely the use of barrier walls and microcapsules to implement the pixel structure in an electrophoretic display.

Therefore, it would have been obvious to one of ordinary skill in the art at the time when the invention was made to combine the teachings of Johnson with the teachings of Kuwahara such that the display device of Johnson (see Figs. 2A-2C) implements barrier walls and/or microcapsules as a well known and established technique for segmenting the display pixels to produce improved viewing quality.

7. As pertaining to **Claim 14**, the combined invention of Johnson and Kuwahara discloses (see Fig. 1, Fig. 4, and Figs. 2A-2C of Johnson; and see Fig. 1 of Kuwahara) that the apparatus further comprises:

a second substrate (i.e., see (12) in Figs. 2A-2C of Johnson) disposed oppositely to the first substrate (i.e., see (11) in Figs. 2A-2C of Johnson); and

a partition wall (i.e., such as that disclosed by Kuwahara) disposed between the first and second substrates (i.e., see (11, 12) in Figs. 2A-2C of Johnson), for defining

the closed container (again, see Fig. 1, Fig. 4, and Figs. 2A-2C of Johnson; and see Fig. 1 of Kuwahara);

wherein the second electrode (i.e., see (6) in Figs. 2A-2C of Johnson, for example) is disposed at a part of the partition wall (i.e., such as that disclosed by Kuwahara), and

wherein the third electrode (i.e., see (6') in Figs. 2A-2C of Johnson, for example) is disposed oppositely to the second electrode (i.e., see (6) in Figs. 2A-2C of Johnson, for example) at another part of the partition wall (i.e., such as that disclosed by Kuwahara; see Page 2 through Page 3, Para. [0027]-[0030] of Johnson; and see Col. 10, Ln. 63-67 through Col. 11, Ln. 1-9 and Ln. 23-35; as well as Col. 11, Ln. 50-67 through Col. 12, Ln. 1-11; and see Col. 15, Ln. 64-67 through Col. 16, Ln. 1-13 of Kuwahara; in addition, see Fig. 5 of Johnson).

8. As pertaining to **Claim 15**, the combined invention of Johnson and Kuwahara discloses (see Fig. 1, Fig. 4, and Figs. 2A-2C of Johnson; and see Fig. 1 of Kuwahara) that the apparatus further comprises:

a second substrate (i.e., see (12) in Figs. 2A-2C of Johnson) disposed oppositely to the first substrate (i.e., see (11) in Figs. 2A-2C of Johnson); and

a partition wall (i.e., such as that disclosed by Kuwahara) disposed between the first and second substrates (i.e., see (11, 12) in Figs. 2A-2C of Johnson), for defining the closed container (again, see Fig. 1, Fig. 4, and Figs. 2A-2C of Johnson; and see Fig. 1 of Kuwahara);

wherein the second electrode (i.e., see (6) in Figs. 2A-2C of Johnson, for example) and the third electrode (i.e., see (6') in Figs. 2A-2C of Johnson, for example) are disposed on the second substrate (i.e., see (12) in Figs. 2A-2C of Johnson; see Page 2 through Page 3, Para. [0027]-[0030] of Johnson; and see Col. 10, Ln. 63-67 through Col. 11, Ln. 1-9 and Ln. 23-35; as well as Col. 11, Ln. 50-67 through Col. 12, Ln. 1-11; and see Col. 15, Ln. 64-67 through Col. 16, Ln. 1-13 of Kuwahara; in addition, see Fig. 5 of Johnson).

9. As pertaining to **Claim 16**, Johnson discloses (see Fig. 1 and Figs. 2A-2C) a driving method for a display apparatus (see Page 1, Para. [0001]-[0003] and see Page 2, Para. [0025]) comprising a first substrate (i.e. ,see (11)) provided with a container (see Figs. 2A-2C; see Page 2 through Page 3, Para. [0027]-[0030]), two types of charged particles (i.e., see (14, 14')) held in the container (again, see Figs. 2A-2C) and which have opposite charge polarities (i.e., positive and negative charge polarities) and a substantially identical color (i.e., black, for example; see Page 2 through Page 3, Para. [0027]-[0030] along with Abstract); and first, second and third electrodes (i.e., see (7, 6, 6')) for generating an electric field in the container (again, see Figs. 2A-2C), with the first electrode (7) being disposed on the first substrate (11; again, see Figs. 2A-2C along with Fig. 3; also see Page 2 through Page 3, Para. [0027]-[0030]); the driving method comprising:

alternately executing (see Figs. 2A-2C along with Fig. 4, for example) a first display operation (i.e., a first display of data; see (Vn) in Fig. 4, for example) and a

second display operation (i.e., a second display of data; see (Vn+1) in Fig. 4, for example),

wherein in the first display operation (i.e., a first display of data; see (Vn) in Fig. 4, for example), the charged particles (i.e., see (14, 14')) create a first distribution (i.e., see Figs. 2A-2C) on a first electrode side (7) by changing a voltage applied to the second electrode (i.e., (6)) or the third electrode (i.e., (6')) after a first reset operation (i.e., see (40) in Fig. 4, for example) in which the charged particles (i.e., see (14, 14')) create a second distribution (i.e., an arbitrary distribution forced by the reset potential (40); see Fig. 4) on a second electrode side (i.e., (6)) and on a third electrode side (i.e., (6')) by applying a first voltage (i.e., see (40)) to the second electrode (i.e., (6)) and to the third electrode (i.e., (6'); again, see Fig. 4 along with Page 2 through Page 3, Para. [0027]-[0030]), and

wherein in the second display operation (i.e., a second display of data; see (Vn+1) in Fig. 4, for example), the charged particles (i.e., see (14, 14')) create a third distribution (i.e., see Figs. 2A-2C) on the first electrode side (7) by changing a voltage applied to the second electrode (i.e., (6)) or the third electrode (i.e., (6')) after a second reset operation (i.e., see (40) in Fig. 4, for example) in which the charged particles (i.e., see (14, 14')) create a fourth distribution (i.e., an arbitrary distribution forced by the reset potential (40); see Fig. 4), substantially identical to the second distribution (i.e., the distribution of particles will be substantially the same, but with reversed polarity), on the second electrode side (i.e., (6)) and on the third electrode side (i.e., (6')) by applying a second voltage (i.e., see (40)), opposite in polarity to the first voltage (i.e., see (40)

wherein the reset operation comprises positive and negative polarity voltages), to the second electrode (i.e., (6)) and to the third electrode (i.e., (6'); again, see Fig. 4 along with Page 2 through Page 3, Para. [0027]-[0030]).

While it is implicit in the display apparatus disclosed by Johnson that the container (see Figs. 2A-2C) must be a closed container in order to hold the dispersion medium and the charged particles of the display, Johnson does not explicitly show the means by which the container is closed. However, the use of microcapsules and barrier walls to segment display pixels in an electrophoretic display are well known in the art and the implementation of such microcapsules and barrier walls is well established. In fact, Kuwahara discloses (see Fig. 1, for example) an electrophoretic display apparatus in which display pixels (6) are segmented into closed containers made up of microcapsules with barrier walls or cells with barrier walls (see Col. 10, Ln. 63-67 through Col. 11, Ln. 1-9 and Ln. 23-35; as well as Col. 11, Ln. 50-67 through Col. 12, Ln. 1-11; and see Col. 15, Ln. 64-67 through Col. 16, Ln. 1-13). It is a goal of Kuwahara to provide an electrophoretic display with improved viewing quality and memory capability, as well as decreased eye fatigue and reduced power consumption (see Col. 15, Ln. 64-67 through Col. 16, Ln. 1-13). Further, the inventions of Johnson and Kuwahara are in the same field of endeavor. Further still, Kuwahara serves to disclose what is well known and established in the art, namely the use of barrier walls and microcapsules to implement the pixel structure in an electrophoretic display.

Therefore, it would have been obvious to one of ordinary skill in the art at the time when the invention was made to combine the teachings of Johnson with the teachings of Kuwahara such that the display device of Johnson (see Figs. 2A-2C) implements barrier walls and/or microcapsules as a well known and established technique for segmenting the display pixels to produce improved viewing quality.

Response to Arguments

10. Applicant's arguments filed 26 August 2009 have been fully considered but they are not persuasive. The applicant has argued that none of the references relied upon by the examiner in the prior Office Action, namely Johnson (US 2005 / 0270267) and Kuwahara et al. (US 6,486,866), teach or fairly suggest the limitations of new **Claims 13-16**. The examiner respectfully disagrees. As stated in the present Office Action, the invention claimed by the applicant is not supported by the specification, is not enabled, and is, in fact, not realizable (see above 35 USC 112 rejections). Aside from this fact, the claims are broadly written and can be easily interpreted as relating to any number of driving methods or driving schemes. Claiming "first," "second," "third," and "fourth," so-called "distributions" of the charged particles is so broad, in fact, that these "distributions" can relate to any arrangement or rearrangement of the charged particles. Furthermore, as with any electrophoretic display, it is impossible to know an exact distribution of particles at any given point in time, and it is further impossible to

know that any voltage potential applied to the electrodes of the display cell will produce the exact same distribution of particles as produced by that voltage potential in the past. Thus, it is the opinion of the examiner, that the applicant is claiming a much broader invention than that which is disclosed in the specification, and a claim to a "distribution" of particles is broad enough to encompass any interpretation of the state of the particles. The combined invention of Johnson and Kuwahara clearly disclose the claimed invention and therefore, the rejection of **Claims 13-16** is maintained.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON M. MANDEVILLE whose telephone number is 571-270-3136. The examiner can normally be reached on Monday through Friday 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexander Eisen can be reached on 571-272-7687. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jason Mandeville
Examiner
Art Unit 2629

/J. M. M./

Examiner, Art Unit 2629

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